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10/560,951	10/06/2006	Osamu Niwa	SAEG124.004APC	1688
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EXAMINER				
KAHN, RACHEL				
ART UNIT		PAPER NUMBER		
1796				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/560,951

Applicant(s)

NIWA ET AL.

Examiner

RACHEL KAHN

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-5,7,8,10,12,27-30,32 and 33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,7,8,10,12,27-30,32 and 33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claims 1, 3-5, 7, 8, 10, 12, 27-30, 32 and 33 are pending as amended on 8/21/09.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/21/09 has been entered.

Response to Arguments

The rejection of **claims 1, 3-6, 10, 12-14, 21-24, 27-30 and 32** under 35 U.S.C. 103(a) as being unpatentable over **Kuriu** (WO00/56548, US patent equivalent, 6645640) in view of **Yamamoto et al** (JP 11-199741) has been withdrawn, as Applicant has amended claim 1 to recite an ethylene-methacrylic acid copolymer ionomer. Neither reference discloses the recited ionomer.

The rejection of claims **6-8, 12 and 24-26** under 35 U.S.C. 103(a) as being unpatentable over **Kuriu** (WO00/56548, US patent equivalent, 6645640) in view of

Yamamoto et al (JP 11-199741) and further in view of **Matsui** et al (JP 2002-248721) has been withdrawn, as Applicant has amended claim 1 to recite an ethylene-methacrylic acid copolymer ionomer. The references do not disclose the recited ionomer.

The rejection of **Claim 31** under 35 U.S.C. 103(a) over **Kuriu** (US 6645640) in view of **Yamamoto** et al (JP 11-199741) as applied to claim 1 above, and further in view of **Toyozumi** (JP 2002-338770) has been withdrawn, as claim 31 has been cancelled.

The rejection of **Claim 32** under 35 U.S.C. 103(a) as being unpatentable over **Kuriu** (US 6645640) in view of **Yamamoto** et al (JP 11-199741) as applied to claim 1 above, and further in view of **Tanaka** et al (JP 2002-172742) has been withdrawn, as Applicant has amended the claim to recite an ethylene-methacrylic acid copolymer ionomer. The references do not disclose the recited ionomer.

The rejection of **Claim 27** under 35 U.S.C. 103(a) as being unpatentable over **Kuriu** (US 6645640) in view of **Yamamoto** et al (JP 11-199741) as applied to claim 1 above, and further in view of **Shibuya** et al (JP 06-345919) has been withdrawn, as Applicant has amended the claim to recite an ethylene-methacrylic acid copolymer ionomer. The references do not disclose the recited ionomer.

Applicant's arguments regarding the rejection of **Claims 6-8, 12 and 24-26** under 35 U.S.C. 103(a) over **Kuriu** in view of **Yamamoto** and further in view of **Matsui** et al (JP 2002-248721) are unpersuasive. Therefore, the rejection is maintained.

In response to Applicant's argument that Matsui teaches away from the present claims, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Kuriu, the primary reference, provides the suggestion to add an antioxidant to the polyamide, but fails to specify the antioxidant. Matsui provides the teaching of a specific antioxidant for use in polyamide films, and provides motivation to use the antioxidant (minimizes strength reduction of the polyamide film following retort treatment [0019]).

Applicant argues that the antioxidant provides unexpected improvement in haze suppression during retort treatment, which would not be obvious over the cited references. Applicant cites the Examples and Comparative Examples as evidence.

Applicant's arguments have been fully considered but they are not persuasive. This evidence is unclear. The description of the preparation for Example 1 teaches the

addition of an antioxidant. All of the remaining examples (including comparative) teach the preparation "as in Example 1." Of the six Examples (Ex 1 and 2, Comp Ex 1-4), only one, comparative example 4, teaches the omission of antioxidant. Applicant's assertion that the antioxidant is responsible for haze suppression appears unsubstantiated, as comparative examples 1 and 2 (which contain antioxidant) show strong whitening during retort, while comparative example 4 shows slight whitening (table 1).

Regarding the rejection of **claim 31** under 35 U.S.C. 103(a) as being unpatentable over **Kuriu** in view of **Yamamoto** and further in view of **Toyozumi** (JP 2002-338770):

Applicant argues that in the present claims, the polyamide layer does not necessarily contain EVOH, and so there would be no reason to add the ionomer disclosed by Toyozumi to compatibilize the polyamide and EVOH. Examiner is confused by this argument, as claim 31 (which has been cancelled, but the recitations are now incorporated into independent claim 1) recites a polyamide layer which comprises a modified ethylene vinyl acetate copolymer (e.g. EVOH) and an ethylene-methacrylic acid copolymer ionomer. It appears that the polyamide layer *does* necessarily contain EVOH.

Applicant also argues that Toyozumi teaches away from the present claims because Toyozumi requires a thermoplastic resin on at least one side of the above

described film. Applicant argues that the present claims do not include such a thermoplastic resin containing layer. The present claims do include at least 2 thermoplastic layers. Regardless, Toyozumi is relied upon solely for the suggestion and motivation to add an ethylene methacrylic ionomer to a composition comprising EVOH and polyamide (improved barrier and pinhole resistance). Applicant's arguments that Toyozumi teaches away from the present claims are, therefore, unpersuasive. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Applicant's arguments regarding the rejection of **Claim 32** under 35 U.S.C. 103(a) over **Kuriu** in view of **Yamamoto** and further in view of **Tanaka** et al (JP 2002-172742) have been fully considered but are unpersuasive.

As in Applicant's arguments filed 3/16/09, Applicant appears to be conflating the "at least one polyamide layer" with the "at least one additional aromatic polyamide layer."

Applicant argues that Tanaka teaches away from the 2 to 10 wt% of aromatic polyamide in claim 32. This limitation to which Applicant refers pertains to the layer

which is primarily aliphatic polyamide. Tanaka is being relied upon for its teaching to add an "additional aromatic polyamide" layer (layer Z, [0012] in Tanaka) to the multilayer film disclosed by Kuriu in view of Yamamoto. Tanaka in no way teaches away from the claimed invention, especially in view of the fact that Tanaka discloses a multilayer film which comprises an EVOH layer (X) [0008], a layer of aliphatic polyamide (Y) [0009], and an additional polyamide layer which is aromatic (Z) [0012].

Applicant's arguments with respect to claims 1, 3-5, 7, 8, 10, 12, 27-30, 32 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-5, 10, 12, 27-30, 32 and 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kuriu** (WO00/56548, the US patent equivalent, 6645640, will be cited herein) in view of **Yamamoto et al** (JP 11-199741), and further in view of **Toyozumi** (JP 2002-338770).

Kuriu discloses a multilayered film consisting of three layers: a polyamide layer, a saponified ethylene-vinyl acetate layer, and a polyamide layer (columns 3-4,

examples 1 and 2). In Example 2 (column 4, lines 9-17), Kuriu teaches that the polyamide layers comprise aliphatic polyamide (nylon-6) as the principal ingredient (86.0 wt %) and aromatic polyamide (poly(m-xylylene adipamide) in an amount of 10 wt %. Kuriu teaches that the film may contain organic additives such as antioxidants in typical amounts (col 2, lines 36-40).

Kuriu fails to teach that the saponified ethylene-vinyl acetate copolymer layer comprises polyamide resin and an alcohol based compound.

Yamamoto discloses a composition which has excellent retort resistance comprising saponified ethylene vinyl acetate (herein EVOH) mixed with a polyamide resin and an alcoholic compound. (English patent abstract and [0004] of machine translation). Yamamoto teaches that this composition may be formed into a film or sheet [0011] and that other materials may be layered on one or both sides [0012].

Yamamoto teaches that EVOH is commonly used as packaging in the food industry, yet it is flawed in terms of its heat resistance, shock resistance and stiffness [0002]. Yamamoto discloses that it is known in the art to blend polyamide resin with EVOH to improve the aforementioned flaws [0002]. It would be obvious, therefore, to one of ordinary skill in the art, to blend polyamide with EVOH in order to improve the heat and shock resistance, as well as stiffness, of the film. However, Yamamoto further teaches that EVOH/polyamide compatibility issues lead to deterioration of physical properties [0003]. Yamamoto teaches that such compatibility issues can be resolved by adding an alcohol-based compound [0004]. It would be obvious, therefore, to one of

ordinary skill, to add alcohol to film comprising a blend of EVOH and polyamide, in order to avoid deterioration of physical properties due to incompatibility.

Yamamoto and Kuriu represent analogous art. Both disclose multilayer films comprising polyamide and EVOH layers for use in food packaging. Furthermore, both are attempting to reduce stiffness in film layers (Kuriu teaches that softening improves pinhole resistance - col 1, lines 19-25). Given Yamamoto's teaching that the physical properties of EVOH, including stiffness, can be improved by adding polyamide and alcohol, it would be obvious to one of ordinary skill in the art to modify the EVOH layer taught by Kuriu (as in example 2) by adding polyamide and alcohol, as taught by Yamamoto, in order to improve the heat and shock resistance, and overall stiffness of the multilayer laminate.

While Kuriu teaches that the polyamide layer of the multilayer film comprises 4.0 wt% of a modified ethylene-vinyl acetate copolymer (column 3, lines 54-56), neither Kuriu nor Yamamoto teach the addition of an ethylene-methacrylic acid copolymer ionomer.

Toyozumi discloses a composition comprising saponified ethylene vinyl acetate, polyamide and an ionomer of an ethylene methacrylic acid copolymer [claim 1], [claim 5]. (Examiner note: ionomer is translated as "eye ONOMA.")

Toyozumi teaches that blends of EVOH and polyamide have nonuniform thickness, which leads to deterioration in gas barrier ("GASUBARIA") and pinhole resistance properties [0004]. Toyozumi discloses that the addition of an olefinically

unsaturated carboxylic acid copolymer solves this problem [0005]. Toyozumi teaches a preferred copolymer from ethylene [0018] and methacrylic acid [0019], and teaches various metal ions for neutralization of the ionomer [0024]. Toyozumi teaches that the best gas barrier properties and pinhole resistance are achieved when the copolymer is present between 3-15 wt% [0029].

It would be obvious, therefore, to one of ordinary skill in the art, to add ethylene methacrylic acid copolymer ionomer, as taught by Toyozumi, to the modified ethylene vinyl acetate containing polyamide layers of the multilayer film taught by Kuriu in view of Yamamoto, in order to improve uniformity, pinhole resistance and gas barrier properties of the layer.

Regarding **claim 3**, Yamamoto teaches the addition of silica to the EVOH resin system [0011].

Regarding instant **claim 4**, Yamamoto discloses that the composition is prepared by mixing a polyamide resin with an alcoholic compound and then adding EVOH to the mixture (English patent abstract and [0004] of machine translation)

Regarding instant **claim 5** both Kuriu and Yamamoto [0007] teach EVOH which fulfills the recited ethylene content and degree of saponification. The EVOH used by Kuriu in examples 1 and 2 contains 32 mol% ethylene and has a 99% degree of saponification (col 3, lines 55-58).

Regarding instant **claim 12**, Kuriu teaches that the multilayer film is produced by coextrusion (col 2, line 50) and biaxial stretching (col 2, line 62). See also Example 1, col 3, lines 60-67.

Regarding instant **claim 27**, Yamamoto teaches that the composition has excellent transparency and retorting resistance (English abstract), and teaches the use of nylon 6 for the polyamide resin in the EVOH layer [0005, 2nd line].

Regarding **claim 28**, Yamamoto discloses the claimed ratios exactly (English patent abstract).

Regarding instant **claims 29 and 30**, Kuriu teaches that the multilayer film is produced by coextrusion (col 2, line 50) and biaxial stretching (col 2, line 62). See also Example 1, col 3, lines 60-67. In addition, Yamamoto discloses coextrusion [0012] as well as stretching by "two axes" (i.e. biaxial stretching) [0011].

Regarding instant **claim 32**, the two polyamide layers taught by Kuriu in Example 2 (column 4), fulfill the recitations of the instant claim. Both polyamide layers comprise 10 wt % aromatic polyamide. Therefore, one layer reads on the recitation of "at least one polyamide layer comprising aromatic polyamide in concentration of 2.0-10 wt%," while the other layer, as it contains aromatic polyamide, reads on the recitation of "at least one additional aromatic polyamide layer."

Regarding instant **claim 33**, Kuriu teaches that modified ethylene-vinyl acetate copolymers include each of the members recited in the instant claim (col 2, lines 20-25).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kuriu** (WO00/56548, the US patent equivalent, 6645640, will be cited herein) in view of

Yamamoto et al (JP 11-199741), and further in view of **Toyozumi** (JP 2002-338770) as applied to claim 1 above, and further in view of **Tokoh** et al (US 5428094).

The above rejection of claim 1 over Kuriu in view of Yamamoto et al and further in view of Toyozumi is incorporated here by reference.

If it is not considered obvious to add silica to the laminate made obvious by Kuriu in view of Yamamoto in Toyozumi, Tokoh teaches that adding water-swellaible phyllosilicate to EVOH allows the resin to retain excellent gas barrier properties and good transparency even under highly humid conditions (col 2, lines 25-42). Given that Kuriu in view of Yamamoto and Toyozumi teach subjecting the laminate to high humidity (retort), it would have been obvious to one of ordinary skill at the time the invention was made to add water swellaible phyllosilicate to the EVOH, as taught by Tokoh, in order to retain excellent gas barrier properties and good transparency.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kuriu** (WO00/56548, the US patent equivalent, 6645640, will be cited herein) in view of **Yamamoto** et al (JP 11-199741), and **Toyozumi** (JP 2002-338770) as applied to claim 1 above, and further in view of **Matsui** et al (JP 2002-248721).

The above rejection of claim 1 over Kuriu in view of Yamamoto et al and further in view of Toyozumi is incorporated here by reference.

While Kuriu teaches the addition of antioxidant to the multilayer film, Kuriu fails to specify an antioxidant, and therefore fails to teach the recitations of instant claims 7 and 8.

Matsui teaches a layered film containing a polyamide layer suitable for packing material subject to retort treatment [0001]. Matsui teaches that the polyamide film has excellent transparency and heat resistance [0002]. Matsui discloses the addition of an antioxidant to the polyamide and suggests the use of pentaerythrityl-tetrakis[3-3,5-di-*t*-butyl-4-hydroxyphenyl]propionate [0020]. Given the teaching by Matsui that the antioxidant minimizes strength reduction of the polyamide film following retort treatment [0019], it would have been obvious to one of ordinary skill in the art to add the antioxidant to the polyamide layers in the laminates taught by Kuriu and Yamamoto, in order to improve toughness of the film.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kuriu** (WO00/56548, the US patent equivalent, 6645640, will be cited herein) in view of **Yamamoto et al** (JP 11-199741), and **Toyozumi** (JP 2002-338770) as applied to claim 1 above, and further in view of **Tanaka et al** (JP 2002-172742).

The above rejection of claim 1 over Kuriu in view of Yamamoto et al and further in view of Toyozumi is incorporated here by reference.

Kuriu fails to teach the use of a primarily aromatic polyamide layer in the same multilayer film with a primarily ethylene vinyl acetate layer. While Yamamoto teaches

the use of additional layers such as polyamide [0013], the reference fails to teach specific types of polyamide, and therefore fails to teach "aromatic polyamide."

Tanaka teaches a biaxially stretched three layer laminate with an EVOH layer, an aliphatic polyamide layer and a xylylene (i.e. aromatic) polyamide containing layer (English patent abstract). Tanaka teaches that the laminates have excellent transparency and are highly suitable for packaging food. Tanaka discloses that layers of EVOH and polyamide are often laminated for use as packaging materials, due to the high gas barrier provided by EVOH and the pinhole resistance provided by polyamide [0002]. However, when stinky items are packaged, the smell leaks, restricting the use of such laminates for many foods [0002].

Tanaka teaches that adding an aromatic polyamide layer to a laminate of EVOH and aliphatic polyamide improves the smell retaining property of the laminate [0004] and [0012].

Given that Kuriu teaches the use of the multilayer films for packaging food (column 3, lines 24-27), it would be obvious to one of ordinary skill in the art to add a layer of aromatic polyamide, as taught by Toyozumi, to the multilayer film taught by Kuriu in view of Yamamoto, in order to improve the smell retaining property of the laminate.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kuriu** (WO00/56548, the US patent equivalent, 6645640, will be cited herein) in view of

Yamamoto et al (JP 11-199741), and **Toyozumi** (JP 2002-338770) as applied to claim 1 above, as evidenced by **Shibuya** et al (JP 06-345919).

The above rejection of claim 1 over Kuriu in view of Yamamoto et al and further in view of Toyozumi is incorporated here by reference.

Yamamoto teaches that the polyamide and alcohol EVOH composition has excellent transparency and retorting resistance (English abstract), and teaches the use of nylon 6 for the polyamide resin in the EVOH layer [0005, 2nd line].

If not considered obvious that the multilayer transparent film disclosed by Kuriu in view of Yamamoto and Toyozumi would inherently have the transparency and boiling resistance as recited in instant claim 27, it would be obvious in view of Shibuya.

Shibuya discloses a laminate composition comprising an inner layer of EVOH blended with polyamide and outer layers of polyamide resin (English patent abstract). Shibuya teaches that this multilayered laminate is useful as packaging for materials subject to retort or boil sterilization [0002, 0042, 0058]. Shibuya also teaches that there was no change in transparency in the three-layer laminate after 30 minutes in 95 °C water or 121 °C steam [0058 and 59].

As noted above, the multilayer film of Kuriu in view of Yamamoto and Toyozumi is identical to the presently claimed, and identical compositions must have identical properties. Accordingly, one of ordinary skill in the art would assume that the properties of instant claim 27 are inherent to the films of Kuriu in view of Yamamoto and Toyozumi, especially as evidenced by Shibuya.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RACHEL KAHN whose telephone number is (571)270-7346. The examiner can normally be reached on Monday to Friday 8:00 am to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/RACHEL KAHN/
Examiner, Art Unit 1796

Rk

/Randy Gulakowski/
Supervisory Patent Examiner, Art Unit 1796

